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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,081	10/10/2003	Eli Brookner	RTN-176PUS	3049

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EXAMINER

SOTOMAYOR, JOHN B

ART UNIT	PAPER NUMBER
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3662

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/684,081

Applicant(s)

BROOKNER ET AL.

Examiner

John B. Sotomayor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10OCT03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings filed October 10, 2003 appear to be informal and are acceptable for examination purposes.

### ***Information Disclosure Statement***

2. The information disclosure statement filed October 10, 2003 has been entered and considered. An initialed copy of the PTO-1449 by the Examiner is attached.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 5, 9-18, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Gellekink ('907) or Bethke et al ('243).

The claims are considered to be met by Gellekink ('907) or Bethke et al ('243) who disclose a radar system and method including, inter alia, radiating first and second beams receiving the echoes and processing these echoes to detect an object.

### ***Claim Rejections - 35 USC § 103***

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 4, 6-8, 19, 20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gellekink ('907) or Bethke et al ('243) in view of Schutte et al ('955) and Ghose ('061).

Gellekink ('907) or Bethke et al ('243) substantially disclose the present invention. However, it appears that Gellekink ('907) or Bethke et al ('243) do not show coherent or incoherent combination of signals. While it is considered well known in the radar art to combine received signals coherently or incoherently, Examiner applies Schutte et al ('955) and Ghose ('061) to specifically show these combining techniques.

Thus it would have been obvious to one of ordinary skill in the art to provide the combining techniques in the Gellekink ('907) or Bethke et al ('243) systems as taught and as motivated by Schutte et al ('955) and Ghose ('061).

Specifically, Schutte et al ('955) teach that numerous problems are encountered when attempting to combine radar return signals. Especially acute are the problem of target range walk, and the different Doppler shift of each return. In the case of target range walk, a target, which is on the boundary of two range bins, may show up in each of the two range bins, and consequently, appear with its energy level split between the two range bins. Target movement across adjacent range bins results when the target has a significant radial velocity component, the radar range resolution is small and

Doppler processing is done over a relatively long coherent processing interval. The advantage of coherently combining the three radar signals prior to detection results in a greater sensitivity for the system. Upwards to 3.47 to 4.75 dB in additional sensitivity can be obtained if the signals are combined before video detecting the signals.

Specifically, Ghose ('061) teaches Apparatus and methods for combining incoherent signals having different carrier frequencies but a common modulation to obtain a coherent summation of the modulations of such signals are described. The apparatus comprises adaptive means of changing the carrier frequencies and corresponding phases of various signals to a common carrier frequency and a common phase, thus enabling the coherent summation of the common modulation and enhancing, thereby, the level of received information content. When the incoherent signals are transponder-signals, radiated from an object or platform in response to a modulated interrogating signal, and are obtained by different frequency offsets from the interrogating signal carrier frequency, the particular offset frequencies being unique to that object or platform, the ability combining of modulations coherently provides a means of unique identification of the object or platform.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited prior art show various radar systems.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Sotomayor whose telephone number is 703-306-4170. The examiner can normally be reached on Monday to Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom H. Tarcza, can be reached on 703-306-4171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John B. Sotomayor  
Primary Examiner  
Art Unit 3662